Union of Concerned Scientists

Citizens and Scientists for Environmental Solutions

The Union of Concerned Scientists is pleased to offer this response to questions on offsets posed by CARB at the April 4, 2008 AB 32 Technical Stakeholder Working Group Meeting.

1. Should California have an offsets program for compliance purposes?

We answer the question in the context of cap-and-trade program (CTP) design. We are not aware of any other instances where compliance offsets would be necessary or appropriate. The optimal offsets policy depends on many questions, and cannot be precisely defined in isolation. Key variables are the scope of CTP and other policies that may be targeting reductions in uncapped sectors.

We see many potential risks to using compliance offsets for achieving mandated reductions, not simply the challenge of ensuring environmental integrity but also weakened incentives for innovation in capped sectors, lost co-benefits, and significant transaction costs to measure and monitor the global warming pollution benefits claimed by offset projects.

With those caveats, in the context of AB 32 implementation, and given that other policies may not be available for targeting some necessary greenhouse gas reductions in uncapped sectors, we argue that compliance offsets should be allowed, but strictly limited as we will discuss further in response to question 3.

2. What should the project approval and quantification process be for approving projects?

First and foremost, compliance offset projects must produce reductions that meet the requirements laid down in AB 32, real, surplus, verifiable, permanent, and enforceable by CARB.

To do this, CARB should start with a small set of project types; those that offer the greatest promise for reliable quantification and that deliver the greatest co-benefits consistent with AB 32's call to maximize additional environmental and economic co-benefits for the people of California.

Attention must be given to establishment of certified methodologies for ex-ante analysis of greenhouse gas benefits and ex-post monitoring. The challenges of ensuring environmental integrity should be recognized. The notion that third-party verification is a panacea must be resisted. The experience in the Kyoto Protocol's Clean Development Mechanism has been that in the absence of procedures for checking third party verifier work, the verifiers are inclined to go along with project developer estimates, both to

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ensure payment and to increase the chance of getting future contracts in a competitive situation.[1] The California Climate Action Registry requires that third party verifiers prove they do not have a financial interest in the success of a particular project, but this does not adequately address the concerns raised here. Objective expert review of randomly selected third party verifier reports seems a reasonable approach to mitigating the incentive for third party verifiers to agree to inflated emission reduction estimates to curry favor with project developers and increase their expected future business.

A note on a particular quantification issue, that of leakage, the shifting of emissions from within the boundaries of offsets projects to outside of them. Leakage has yet to have been adequately managed and is resistant to sufficient treatment in a cost effective way at the project level. A useful step forward to ensuring that offsets are contributing to declining emissions in the sector being targeted would be to require monitoring the targeted sector to ensure that emissions are being reduced not just within the confines of project boundaries but in the sector as a whole. This would also lay the groundwork for future inclusion of uncapped sectors in the cap.

3. Should there be quantitative limits on the use of offsets for compliance purposes? If so, how should the limits be determined?

Yes, we support quantitative limits. The proper frame for establishing limits is the extent to which reductions in California's capped sectors should be allowed to be diverted elsewhere. As GHG reductions in the state's capped sectors are diverted to offset projects, the risk of locking in high-emitting and long-lasting technologies in the capped sectors increases, while the potential for technology innovation, as well as achieving air quality and public health co-benefits from those sectors decreases.

We have advocated for a broad scope for cap-and-trade, covering as much of the economy as possible – in particular key high-emitting sectors, such as energy and transportation. From this broad scope, direct reductions can be achieved in these critical sectors. While we recognize the global warming pollution is emitted from all sectors of the economy, we also view innovation in key sectors such as energy and transportation as critical. By prioritizing innovation in these key sectors, we can (1) reduce the future cost of global warming solutions, (2) provide the world the necessary innovations to manage emissions in a way that enhances our standard of living, and (3) benefit in the process from greater exports in the surging global clean tech market.

To summarize, we support limiting offsets to a small percentage of required GHG reductions because this will:

- Ensure declining emissions in capped sectors.
- Avoid costly lock-in from continued investment in high emitting capital. By ensuring that capped sectors take action to reduce their own emissions, limits on offsets can prevent lock-in to high emitting technologies. If investment is not

[1] Schneider, Lambert. 2007. "Is the CDM fulfilling its environmental and sustainable development objectives? An evaluation of the CDM and options for improvement," Report prepared for the World Wildlife Fund. (November 5)

diverted from high emitting technologies to clean technologies, if we lock ourselves in to high emitting capital, this will prove costly in the post-2020 period.

- Promote innovation in capped sectors. California has experience an incredibly amount of clean tech investment and excitement. California received $1.8 billion in venture capital funding in 2007.[2] This was more than all of Europe combined. And the momentum has continued despite the economic slow down.[3] Clearly the venture capitalists expect California will be a center of global warming innovation. Offset policy may well be the determining factor in the extent to which this potential is realized. How is it that limiting offsets promotes innovation in capped sectors? In simplest terms, by maintaining the emission reductions that will be asked of the capped sectors. The Market Advisory Committee report emphasized investment in research to promote innovation; their emphasis was on the supply side. Berkeley Professor Margaret Taylor's research suggests that innovation is maximized when policy gives attention to the demand side of the market as well. To the extent that offsets spread out the mitigation effort they reduce the stringency of the program and they also weaken the price signal that will indicate to entrepreneurs the returns expected from their inventive aspirations. From another perspective, consider the body of research demonstrating that the costs of new technologies fall over time with learning by doing and increasing economies of scale that come from greater production. So, to the extent that offsets divert reductions to uncapped sectors, innovation in capped sectors suffers.
- Preserve the option of linkage. Quantitative limits on offsets would preserve the option of linkage to other cap-and-trade programs. Both the EU system and the RGGI system in the northeast have fairly strict limits on offsets and can be expected to resist linkage to a system without limits. Linkage to other cap-and-trade programs of a similar environmental stringency is a preferable way to extend the geographic scope over which reductions can take place.

4. Should California establish geographic limits on offsets?

In the context of AB 32 implementation, we have argued that offsets should be limited to California. In the WCI context, we have advocated for offsets to be limited to WCI jurisdictions. Offsets should only come from areas that have committed to strong, economy-wide caps, else, the potential for leakage increases substantially. Moreover, in the same way that allowing a sector to profit from offsets can be expected to create resistance to being directly capped in the future, a state or province would have a reduced incentive to join a mandatory cap and trade program if it can enjoy the economic benefits

[2] David Baker, 2008, "California scores nearly half of North American green tech capital," San Francisco Chronicle (January 17). The market for clean energy generating technologies itself, i.e. not counting all of clean tech but only clean energy, surged to $77 billion in 2007 from $55 billion in 2006; when venture capital, project finance and research and development dollars are included, the jump was from $93 billion to $148 billion (Makower, Joel, Ron Pernick, and Clint Wilder. 2008. "Clean Energy Trends," Clean Edge: San Francisco (March)

[3] Gronewold, Nathanial, 2008, "Renewable Energy: Venture capital keeps industry humming in credit crisis," Greenwire (April 18)

of selling offset projects without making the commitment of mandatory economy-wide reductions.

The case for geographic limits to some extent overlaps the arguments for quantitative limits. We only address the separate arguments here.

We support putting geographic limits on offsets because this will:

- Boost confidence in integrity. Retaining direct control – either in a California only or a WCI only context – over evaluation and monitoring should increase confidence in offsets' integrity.
- Preserve WCI leadership. Though AB 32 and the WCI initiative are bold and excellent first steps on the one hand, on the other hand these reductions fall somewhat short of what the region needs to be doing within its own borders to be on a path to avoiding dangerous climate change according to research by, for example, the Intergovernmental Panel on Climate Change and the Union of Concerned Scientists.[4]
- Avoid diverting investment to other locations. The reductions called for in AB 32 and the WCI should be achievable at moderate cost, even before considering valuable co-benefits. In light of this, rather than outsourcing the effort, geographic limits will ensure that Californians/WCI residents benefits from investment in global warming solutions.
- Avoid loss of co-benefits. Global warming solution investments offer valuable co-benefits, both environmental and economic: reduced energy consumption and improved air quality are two crucial co-benefits. Sending money from the pockets of consumers to offset projects out of state (or outside of the WCI) would in effect export the potential co-benefits that climate action offer residents of the region. In the context of a reduction goal that is achievable at moderate cost, geographic limits are a reasonable approach to ensuring the capture of co-benefits.

The voluntary offset market

The difference between compliance offsets (offsets used as an alternative compliance mechanism) and voluntary offsets (for people and firms that wish to go beyond regulatory requirements) is an important one. We support the continued development of a robust and credible voluntary market.

[4] Here's what these sources indicate about the level of reductions consistent with avoiding dangerous climate change. IPCC's *Climate Change 2007 – Mitigation of Climate Change* (Contribution of Working Group to the Fourth Assessment Report of the IPCC), Ch. 13, p. 776, says that Annex 1 countries, roughly the developed countries, need to be 25-40% below 1990 levels as whole in 2020. UCS' Roadmap Analysis suggests the US as a whole should aim for 15-20% below 2000 levels (Luers, Amy, Michael Mastrandrea, Katharine Hayhoe, and Peter Frumhoff, 2007, "How to Avoid Dangerous Climate Change: A Target for US Emissions," Union of Concerned Scientists.

Critique of US EPA offset modeling

During the technical working group discussions on offsets, several stakeholders mentioned the EPA's modeling on the topic. There is reason to believe that the US EPA's modeling of the impact that international offsets would have on U.S. climate action is not realistic. Here is why:

The US EPA's modeling assumes that that the price of an international offsets will be $9 per ton in 2015. Page 88 of the EPA's analysis of S.2181 gives offset prices over time (http://www.epa.gov/climatechange/downloads/s2191_EPA_Analysis.pdf). This is difficult to accept as reasonable when the current price for international offsets (technically, Certified Emission Reductions generated under the Kyoto Protocol's Clean Development Mechanism) is about $25 and over $30 when potentially invalid reduction claims on the order of 20% are factored in (a la Schneider, citation given in a previous footnote; invalid offset claims mean the dollars going to offsets are spread over a smaller denominator, which produces a higher "real" price.) The actual price was $24.78 during the first week of April 2008[5] and this value increases to about $30.97 if 20% of the reductions are not valid as Schneider suggests may be the case.

Pg. 27 of the EPA analysis shows allowance prices in different scenarios.

S.2191 is their principal result for modeling L-W, and shows a 2015 price of, $29-$40.

The unlimited offsets scenario reduces the allowance price to $11/ton because of the assumption on international offset prices. (With unlimited offsets, the price is naturally driven close to the offset price level.) Offset proponents point to this result as an indication of the cost savings that can be expected with unrestricted international offsets. Those inclined to believe this modeling results have the burden of explaining why it is realistic given the difficulties the international offset market has experienced thus far. While there are both efficiency and equity reasons to support effective flows of finance to clean development in the international context, we should resist flawed modeling and simplistic reasoning.

Other comments on the EPA's modeling of international offsets:

- Overly optimistic supply curve. Even though these reductions (anticipated international offsets) are entirely voluntary projects, the assumption underlying the EPA's offset supply curve is that every economically rational reduction will materialize. This is highly unlikely.

- Accounting for non-additional offsets. The offset scenario implicitly assumes perfect accounting, that all offsets claimed will be real. There is no discounting to account for possibly nonadditional projects. Schneider (2007) looked at a random sample of 97 CDM projects, and he found 40% of the projects representing 20%

[5] For Dec 08 CERs on the US secondary market,
According to http://www.carbonpositive.net/viewarticle.aspx?articleID=1044

of the credits were of doubtful or questionable. Others that have looked closely at the CDM have also found many instances of projects that are not additional, do not produce emission reductions. For example, looking at natural gas and hydro electric CDM projects, respectively, Wara (2008) and Haya (2007). In light of this, it would be appropriate to revise the assumption that 100% of claimed offset credits are real, or to otherwise account for the analytical challenges that offsets present.

- Transaction costs of offsets. The modeling approach to offsets does not take into account the transaction costs of offset projects, ex-ante and ex-post evaluation and monitoring. While it may be difficult to quantify these societal transaction costs – some work has been done on the transaction costs that developers fact – the issue deserves some attention. Here is what the Cal EPA Market Advisory Committee said in their report on cap-and-trade design for California, "[T]he number of staff needed to implement an effective offset monitoring program could conceivably be larger than the staff needed to run the cap-and-trade program itself," p.74 (Market Advisory Committee 2007). The issue is what economists would call the incentive compatibility problems we discussed above. In the absence of a serious effort to evaluate the work of third party verifiers, all actors in an offset program have incentives to inflate claimed reductions (indeed, the cheapest "reductions" will be investments that would have been made anyway). Sellers want more "product" to sell. Buyers benefit from the price being depressed by greater supply. And third party verifiers are interested in developing a reputation for giving favorable reviews, so that they will get more business. Again, this is assuming insufficient oversight of third party verifiers. Schneider (2007, pp. 19-24) details poor performance by third party verifiers in the CDM experience thus far.